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EXAMINER

CHEN, QING

ART UNIT	PAPER NUMBER
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2191

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/775,531

Applicant(s)

DIAS ET AL.

Examiner

Qing Chen

Art Unit

2191

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-18 and 20-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-18 and 20-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/ are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

1. This Office action is in response to the RCE filed on October 29, 2007.
2. **Claims 1-4, 6-18, and 20-33** are pending.
3. **Claims 1, 2, 4, 7, 8, 10, 11, 13, 14, 16-18, 20, 22, 23, 25-29, and 31-33** have been amended.
4. **Claims 5 and 19** have been cancelled.
5. The objection to Claim 19 is withdrawn in view of Applicant's cancellation of the claim.
6. The 35 U.S.C. § 112, second paragraph, rejection of Claim 22 is withdrawn in view of Applicant's amendments to the claim.

Response to Amendment

Specification

7. The disclosure is objected to because of the following informalities:
 - "Also, The set of recommendation rules" should read -- Also, the set of recommendation rules -- on page 16, line 2.Appropriate correction is required.

Claim Objections

8. **Claims 15, 16, and 27** are objected to because of the following informalities:
 - **Claim 15** recites the limitation "the operations." Applicant is advised to change this limitation to read "the one or more operations" for the purpose of providing it with proper explicit antecedent basis.

Art Unit: 2191

- **Claim 16** depends on Claim 15 and, therefore, suffers the same deficiency as Claim 15.
- **Claim 27** contains a typographical error: “automatically determining the recommendation for the solution comprises code in response to determining the first performance problem” should presumably read -- automatically determining the recommendation for the solution in response to determining the first performance problem --.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. **Claims 1-4, 6-18, and 20-33** are rejected under 35 U.S.C. 102(b) as being anticipated by **US 6,035,306 (hereinafter “Lowenthal”)**.

As per **Claim 1**, Lowenthal discloses:

- receiving information indicative of a set of rules classifying operations performed in a database as one or more performance problems (*see Column 5: 11-25, “... if Table A and Index 1 are both heavily used, the three disks that the stripes of these objects share will be overloaded,*

Art Unit: 2191

and access requests will queue, generating an activity "hot-spot" and costly delays in servicing a customer request for a record."");

- determining one or more values that quantify an impact for the one or more performance problems based on performance of operations in the database (*see Figure 18; Column 13: 50-56, "The DBA might then choose to look at the samples for plex 14A I/O over the time period from 5:00 am to 1:00 PM, resulting in the display of FIG. 18. FIG. 18 shows that there is spike of abnormally high activity on plex 14A during the time period of poor performance, indicating that the DBA is homing in on the problem."");*

- determining a first performance problem from the one or more performance problems based on a matching between the one or more values for the one or more performance problems and at least one rule in the set of rules (*see Column 13: 50-59, "The DBA might then choose to look at the samples for plex 14A I/O over the time period from 5:00 am to 1:00 PM, resulting in the display of FIG. 18. FIG. 18 shows that there is spike of abnormally high activity on plex 14A during the time period of poor performance, indicating that the DBA is homing in on the problem. This process would continue with the DBA next looking at the individual tablespaces and files stored in plex 14A until the database objects causing the problem are identified."");* and

- generating information indicative of a recommendation for a solution for the first performance problem (*see Column 14: 22-39, "First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106. If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110."").*

As per **Claim 2**, the rejection of **Claim 1** is incorporated; and Lowenthal further discloses:

- wherein the set of rules for the one or more performance problems include symptoms and root problems; wherein symptoms are analyzed to determine a root performance problem (see Column 5: 11-25, "... if Table A and Index 1 are both heavily used, the three disks that the stripes of these objects share will be overloaded, and access requests will queue, generating an activity "hot-spot" and costly delays in servicing a customer request for a record."; Column 13: 19-59, "Next, the DBA might select to analyze the stripeset activity. FIG. 14 shows the display that would result. From FIG. 14, it is apparent that stripeset 14 is the busiest or "hottest" stripeset, The question is now what is causing this stripe set to be so hot.").

As per **Claim 3**, the rejection of **Claim 2** is incorporated; and Lowenthal further discloses:

- wherein the symptoms are classified from a first set of performance problems to a second set of performance problems (see Figures 14-18; Column 11: 18-21, "In the described embodiment, the data is displayed as a bar graph with the stripe sets arranged in descending order of usage, as shown in FIG. 14."; Column 12: 22-28, "After one set of data is displayed, a user can display usage data related to any of the displayed items. Referring again to FIG. 14, further analysis may be carried out for any of the stripe sets shown. By right-clicking on bar 83, a menu 84 may be brought up which allows a user to select the disk, file volume, plex, or tablespace usage associated with stripe 14 for display.").

As per **Claim 4**, the rejection of **Claim 2** is incorporated; and Lowenthal further discloses:

- wherein the information indicative of the recommendation for a solution comprises any symptoms that were analyzed to determine the root performance problem (*see Column 14: 22-39, "First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106. If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110."*).

As per **Claim 6**, the rejection of **Claim 1** is incorporated; and Lowenthal further discloses:

- wherein the one or more values comprising time values that quantify the impact of the one or more performance problems (*see Figure 18; Column 13: 50-56, "The DBA might then choose to look at the samples for plex 14A I/O over the time period from 5:00 am to 1:00 PM, resulting in the display of FIG. 18. FIG. 18 shows that there is spike of abnormally high activity on plex 14A during the time period of poor performance, indicating that the DBA is homing in on the problem."*).

As per **Claim 7**, the rejection of **Claim 6** is incorporated; and Lowenthal further discloses:

- determining the time values using at least one of a time model that classifies operations in the database as wasteful operations and a wait model that classifies operations in

Art Unit: 2191

the database waiting for completion of one or more external events (see Figure 13; Column 9: 29-42, "Several different types of data are collected for the disk drive, plex, and database file usage samples. These data types will be referred to a properties below. The properties collected include the following: number of reads per second; number of writes per second; number of kilobytes read per second; number of kilobytes written per second; queue length, which is the average number of I/O requests pending for a disk drive during the measurement period; service time, which is the average time in milliseconds for an I/O request to be completed; percent busy, which represents the average utilization factor for a disk during the measurement period; and percent wait, which is the average percentage of time that there are transactions waiting for service during the measurement period."; Column 10: 48-51, "Next the user selects the desired property to be displayed from the drop down menu 74. The available properties will vary, depending on the particular item selected in I/O type menu 72.").

As per **Claim 8**, the rejection of **Claim 1** is incorporated; and Lowenthal further discloses:

- determining one or more operations in the database that caused the first performance problem (see Column 13: 57-59, "This process would continue with the DBA next looking at the individual tablespaces and files stored in plex 14A until the database objects causing the problem are identified."); and
- analyzing stored information for the one or more operations absent direct user intervention to generate the information indicative of the recommendation for the solution (see Column 14: 22-39, "First, the system determines the busiest stripe set, block 104. Next, the

Art Unit: 2191

system determines whether the busiest stripe set has more than one plex stored in it, block 106. If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110. ").

As per **Claim 9**, the rejection of **Claim 8** is incorporated; and Lowenthal further discloses:

- wherein the stored information comprises a snapshot of information for the one or more operations (*see Column 9: 20-23, "These measurements provide a series of snapshots of the system performance which are used by the analysis tool described below to diagnose system problems. ").*

As per **Claim 10**, the rejection of **Claim 1** is incorporated; and Lowenthal further discloses:

- automatically determining the recommendation for the solution in response to determining the first performance problem (*see Column 14: 22-39, "First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106. If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110. ").*

As per **Claim 11**, the rejection of **Claim 1** is incorporated; and Lowenthal further discloses:

Art Unit: 2191

- determining a recommendation rule from a set of recommendation rules associated with the first performance problem, each recommendation rule in the set of recommendation rules indicative of at least one recommendation for a solution for the first performance problem (*see Column 14: 17-39, "Once the user has selected a time period and property, the present invention carries out the remainder of the procedure shown in FIG. 19 to recommend placement actions to take out. "*);
- determining one or more operations that caused the first performance problem (*see Column 14: 17-39, "First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106. "*);
- applying the recommendation rule to the one or more operations (*see Column 14: 17-39, "First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106. "*); and
- determining a recommendation for the solution in response to a determination that the one or more operations satisfy the recommendation rule (*see Column 14: 17-39, "If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110: "*).

As per **Claim 12**, the rejection of **Claim 1** is incorporated; and Lowenthal further discloses:

- outputting the recommendation for the solution (*see Column 14: 40-45, "Following the above procedure, and assuming that a DBA has changed the placement in accordance with the recommendation, the database system is monitored during normal operation for a period of*

Art Unit: 2191

time so that new samples can be gathered with the new placement in operation. Then the analysis of FIG. 19 would be carried out again." It is inherent that the recommendation is outputted, so the DBA can make decisions regarding the recommendation.).

As per **Claim 13**, the rejection of **Claim 1** is incorporated; and Lowenthal further discloses:

- generating information specifying one or more operations performed in the database that are not causing performance problems (*see Column 13: 60-62, "... the lightly used resources of the database have also been identified ... "*).

As per **Claim 14**, Lowenthal discloses:

- collecting information that quantifies an impact for one or more operations performed in the database (*see Figures 9-11; Column 9: 28-41, "Several different types of data are collected for the disk drive, plex, and database file usage samples. "*);
- associating the information for one or more operations with the one or more performance problems (*see Figures 9-11; Column 9: 43-67, "FIG. 9 shows the format for the data taken and stored for the disk performance samples, along with exemplary data." and "FIG. 10 shows the format for the data taken and stored for the plex performance samples, along with exemplary data." and "FIG. 11 shows the format for the data taken and stored for the Oracle file performance samples, along with exemplary data. "*);
- analyzing the associated information for the one or more performance problems based on a set of rules classifying operations performed in a database into one or more performance

Art Unit: 2191

problems to determine a first performance problem from the one or more performance problems (see Figures 13-18; Column 5: 11-25, "... if Table A and Index 1 are both heavily used, the three disks that the stripes of these objects share will be overloaded, and access requests will queue, generating an activity "hot-spot" and costly delays in servicing a customer request for a record."; Column 13: 57-62, "This process would continue with the DBA next looking at the individual tablespaces and files stored in plex 14A until the database objects causing the problem are identified. At this point, the lightly used resources of the database have also been identified, facilitating the replacement of the problem objects. "); and

- generating information indicative of a recommendation for a solution for the first performance problem (see Column 14: 22-39, "First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106. If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110.").

As per **Claim 15**, the rejection of **Claim 14** is incorporated; and Lowenthal further discloses:

- determining when one or more operations that are associated with the one or more performance problems are being performed (see Figure 18; Column 13: 50-56, "The DBA might then choose to look at the samples for plex 14A I/O over the time period from 5:00 am to 1:00 PM, resulting in the display of FIG. 18. FIG. 18 shows that there is spike of abnormally high activity on plex 14A during the time period of poor performance, indicating that the DBA is homing in on the problem. "); and

Art Unit: 2191

- timing the one or more operations that are associated with the one or more performance problems to generate one or more time values for the one or more operations that quantify the impact of the one or more operations (*see Figure 18; Column 13: 50-56, "The DBA might then choose to look at the samples for plex 14A I/O over the time period from 5:00 am to 1:00 PM, resulting in the display of FIG. 18. FIG. 18 shows that there is spike of abnormally high activity on plex 14A during the time period of poor performance, indicating that the DBA is homing in on the problem."*).

As per **Claim 16**, the rejection of **Claim 15** is incorporated; and Lowenthal further discloses:

- wherein the one or more operations that are associated with the one or more performance problems are determined based on at least one of a time model that classifies operations in the database as wasteful operations and a wait model that classifies operations in the database waiting for completion of one or more external events (*see Figure 13; Column 9: 29-42, "Several different types of data are collected for the disk drive, plex, and database file usage samples. These data types will be referred to a properties below. The properties collected include the following: number of reads per second; number of writes per second; number of kilobytes read per second; number of kilobytes written per second; queue length, which is the average number of I/O requests pending for a disk drive during the measurement period; service time, which is the average time in milliseconds for an I/O request to be completed; percent busy, which represents the average utilization factor for a disk during the measurement period; and percent wait, which is the average percentage of time that there are transactions waiting for*

Art Unit: 2191

service during the measurement period.”; Column 10: 48-51, “Next the user selects the desired property to be displayed from the drop down menu 74. The available properties will vary, depending on the particular item selected in I/O type menu 72.”).

As per **Claim 17**, the rejection of **Claim 14** is incorporated; and Lowenthal further discloses:

- wherein the set of rules for the one or more performance problems include symptoms and root problems, wherein symptoms are analyzed to determine a root performance problem (see Column 5: 11-25, “... if Table A and Index I are both heavily used, the three disks that the stripes of these objects share will be overloaded, and access requests will queue, generating an activity “hot-spot” and costly delays in servicing a customer request for a record.”; Column 13: 19-59, “Next, the DBA might select to analyze the stripeset activity. FIG. 14 shows the display that would result. From FIG. 14, it is apparent that stripeset 14 is the busiest or “hottest” stripeset, The question is now what is causing this stripe set to be so hot.”).

As per **Claim 18**, the rejection of **Claim 17** is incorporated; and Lowenthal further discloses:

- wherein the information indicative of the recommendation for the solution comprises any symptoms that were analyzed to determine the root performance problem (see Column 14: 22-39, “First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106. If only a

Art Unit: 2191

single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110.").

As per **Claim 20**, the rejection of **Claim 14** is incorporated; and Lowenthal further discloses:

- determining one or more operations in the database that caused the first performance problem (*see Column 13: 57-59, "This process would continue with the DBA next looking at the individual tablespaces and files stored in plex 14A until the database objects causing the problem are identified."*); and
- reviewing stored information for the one or more operations to generate the information indicative of the recommendation for the solution (*see Column 14: 22-39, "First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106. If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110."*).

As per **Claim 21**, the rejection of **Claim 20** is incorporated; and Lowenthal further discloses:

- wherein the stored information comprises a snapshot of information for the one or more operations (*see Column 9: 20-23, "These measurements provide a series of snapshots of the system performance which are used by the analysis tool described below to diagnose system problems."*).

As per **Claim 22**, the rejection of **Claim 14** is incorporated; and Lowenthal further discloses:

- automatically determining the recommendation for the solution in response to determining the first performance problem (*see Column 14: 22-39, "First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106. If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110."*).

As per **Claim 23**, the rejection of **Claim 14** is incorporated; and Lowenthal further discloses:

- determining a recommendation rule from a set of recommendation rules associated with the first performance problem, each recommendation rule in the set of recommendation rules indicative of at least one recommendation for a solution to the first performance problem (*see Column 14: 17-39, "Once the user has selected a time period and property, the present invention carries out the remainder of the procedure shown in FIG. 19 to recommend placement actions to take out."*);
- determining one or more operations that caused the first performance problem (*see Column 14: 17-39, "First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106."*);

Art Unit: 2191

- applying the recommendation rule to the one or more operations (*see Column 14: 17-39, "First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106."*); and
- determining a recommendation for the solution in response to a determination that the one or more operations satisfy the recommendation rule (*see Column 14: 17-39, "If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110."*).

As per **Claim 24**, the rejection of **Claim 14** is incorporated; and Lowenthal further discloses:

- outputting the recommendation for the solution (*see Column 14: 40-45, "Following the above procedure, and assuming that a DBA has changed the placement in accordance with the recommendation, the database system is monitored during normal operation for a period of time so that new samples can be gathered with the new placement in operation. Then the analysis of FIG. 19 would be carried out again." It is inherent that the recommendation is outputted, so the DBA can make decisions regarding the recommendation.*).

As per **Claim 25**, the rejection of **Claim 14** is incorporated; and Lowenthal further discloses:

- generating information specifying one or more operations performed in the database that are not causing performance problems (*see Column 13: 60-62, "... the lightly used resources of the database have also been identified ..."*).

Claims 26-28 are computer program product claims corresponding to the method claims above (Claims 1, 10, and 11) and, therefore, are rejected for the same reasons set forth in the rejections of Claims 1, 10, and 11.

Claims 29-33 are computer program product claims corresponding to the method claims above (Claims 14, 15, 20, 22, and 23) and, therefore, are rejected for the same reasons set forth in the rejections of Claims 14, 15, 20, 22, and 23.

Response to Arguments

11. Applicant's arguments filed on October 29, 2007 have been fully considered, but they are not persuasive.

In the remarks, Applicant argues:

a) Lowenthol merely states that the objective of a DBA in doing placement of data is the achieve three goals. First, to parallelize access to data. Second, is to load-level access. And, third, is to choose placement that avoids pile-up. Lowenthol states that optimal placement is achieved when all three of these objectives are met perfectly and is the goal of DBAs in performing placement.

In contrast amended claim 1 recites classifying operations performed in a database as one or more performance problems. Typically, performance problems are something to be avoided or minimized. However, Lowenthol encourages achievement of all three of the above discussed objectives. Thus, while there may be situations that prevent the DBA from achieving perfect

Art Unit: 2191

placement, Lowenthal fails to teach or suggest the feature recited in claim 1 of "receiving information indicative of a set of rules classifying operations performed in a database as one or more performance problems" by establishing three abstract goals or objectives that describe perfect placement.

Examiner's response:

a) Examiner disagrees. Lowenthal clearly discloses "receiving information indicative of a set of rules classifying operations performed in a database as one or more performance problems" (*see Column 5: 11-25, "... if Table A and Index 1 are both heavily used, the three disks that the stripes of these objects share will be overloaded, and access requests will queue, generating an activity "hot-spot" and costly delays in servicing a customer request for a record."*). Thus, the activity "hot-spots" are the rules that a DBA analyzes to pinpoint the operations that are causing the performance problems (*i.e.*, sudden degradation of performance).

In the remarks, Applicant argues:

b) In another example, amended claim 1 recites the feature of "determining a first performance problem from the one or more performance problems based on a matching between the one or more values for the one or more performance problems and at least one rule in the set of rules." The Office Action alleges that Lowenthal discloses the above-recited feature in part by the DBA looking at the raw data in an attempt to determine a problem in Col. 13, lines 50-56. The Office Action further alleges that Lowenthal discloses rules that are used to determine the first performance problem in Col. 14, lines 7-16 where different properties are more or less

Art Unit: 2191

important depending on the particular application of the database being analyzed. However, Applicants respectfully submit that a DBA reviewing raw data based on the DBA's subjective determination of which properties are more or less important as in Lowenthal is substantially different from determining a performance problem from one or more performance problems classified by a set of rules based on a matching between one or more values for the one or more performance problems and at least one rule in the set of rules as recited in claim 1.

Examiner's response:

b) Examiner disagrees. Lowenthal clearly discloses "determining a first performance problem from the one or more performance problems based on a matching between the one or more values for the one or more performance problems and at least one rule in the set of rules" (*see Column 13: 50-59, "The DBA might then choose to look at the samples for plex 14A I/O over the time period from 5:00 am to 1:00 PM, resulting in the display of FIG. 18. FIG. 18 shows that there is spike of abnormally high activity on plex 14A during the time period of poor performance, indicating that the DBA is homing in on the problem. This process would continue with the DBA next looking at the individual tablespaces and files stored in plex 14A until the database objects causing the problem are identified."*). Thus, a DBA attempts to pinpoint the operations that are causing the performance problems by correlating the sample I/O operations from a specified time period of poor performance with the determined "hot-spot" storage location (matching between the one or more values for the one or more performance problems and at least one rule in the set of rules).

Art Unit: 2191

In the remarks, Applicant argues:

c) Amended claim 2 recites the feature of "wherein the set of rules for the one or more performance problems include symptoms and root problems, wherein symptoms are analyzed to determine a root performance problem." The Office Action alleges that Lowenthol discloses the above-recited feature in Col. 5, lines 11-25 where Lowenthol simply suggests that if Table A and index 1 are both heavily used, the three disks that will be overloaded. However, Lowenthol's hypothetical scenario that the three disks are overloaded does not teach or suggest that the heavy usage is a rule symptom as recited in claim 2, nor that the symptom is analyzed as recited in claim 2.

Examiner's response:

c) Examiner disagrees with Applicant's assertion that the scenario of overloaded disks does not teach or suggest that the heavy usage is a rule symptom. The overloaded disks indicate an activity "hot-spot" that offers a clue to the DBA as to where the performance problems originate from. The DBA analyzes these activity "hot-spots" to pinpoint the operations that are causing the performance problems (symptoms are analyzed to determine a root performance problem).

Furthermore, Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

In the remarks, Applicant argues:

Art Unit: 2191

d) Claim 3 recites the feature of "wherein the symptoms are classified from a first set of performance problems to a second set of performance problems." The Office Action alleges that Lowenthol discloses that above-recited feature in Col. 12, lines 22-28 where the DBA of Lowenthol is able to drill down to different levels of data displayed. However, simply allowing the user to drill down from data representing a disk, to a volume, to a plex, or to a tablespace does not teach or suggest that symptoms are classified from a first set of performance problems to a second set of performance problems. The data displayed in Lowenthol is simply raw data. When displayed, the DBA has to determine whether the raw data indicates a problem, (e.g., the DBA has to decided whether a specific value of the raw data is a symptom of a yet to be determined problem). Therefore, the data in Lowenthol is merely raw data, which is substantially different from the symptoms recited in claim 3, and even more different from symptoms that are classified from a first set of performance problems to a second set of performance problems as recited in claim 3.

Examiner's response:

d) Examiner disagrees. Lowenthol clearly discloses "wherein the symptoms are classified from a first set of performance problems to a second set of performance problems" (*see Figures 14-18; Column 11: 18-21, "In the described embodiment, the data is displayed as a bar graph with the stripe sets arranged in descending order of usage, as shown in FIG. 14."*; Column 12: 22-28, "After one set of data is displayed, a user can display usage data related to any of the displayed items. Referring again to FIG. 14, further analysis may be carried out for any of the stripe sets shown. By right-clicking on bar 83, a menu 84 may be brought up which allows a user

Art Unit: 2191

to select the disk, file volume, plex, or tablespace usage associated with stripe 14 for display.”).

Note that a bar graph is generated for the stripe set, disk, file, volume, plex, and tablespace data usage. The bar graph arranges the data in descending order of usage. Thus, a DBA would easily identify an activity “hot-spot” (*i.e.*, the longest bar) using the bar graph. A DBA is able to pinpoint the operations that are causing the performance problems by first analyzing the hottest stripe set, then the hottest disk, then the hottest plex, and so on. Each of these “hot-spots” indicates a performance problem associated with its specific level of storage (*e.g.*, stripe set, disk, file, volume, plex, tablespace, etc.) (symptoms are classified from a first set of performance problems to a second set of performance problems).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to Applicant’s disclosure.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Qing Chen whose telephone number is 571-270-1071. The Examiner can normally be reached on Monday through Thursday from 7:30 AM to 4:00 PM. The Examiner can also be reached on alternate Fridays.

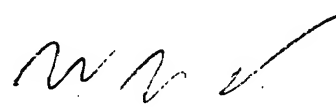
If attempts to reach the Examiner by telephone are unsuccessful, the Examiner’s supervisor, Wei Zhen, can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2191

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

QC
January 10, 2008


WEI ZHEN
SUPERVISORY PATENT EXAMINER